USAWC STRATEGY RESEARCH PROJECT

IS SEA BASED SUSTAINMENT ACHIEVABLE BY 2015?

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ABSTRACT

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Inherent in the Joint Logistics component of the seabasing concept is the notion that logistics in support of the forces ashore will flow through the Sea Base. Key capabilities such as Command and Control (C2), total asset/in-transit visibility, selective off-load/on-load, and medical and tailored logistics packages are also enablers for the seabasing concept. Such improved logistics capabilities, however, represent a tremendous leap over current operational logistics methods and may not be achievable by the envisioned year – 2015 – for a number of environmental reasons. This paper focuses on the logistics components necessary to sustain the Sea Base and, ultimately, joint forces ashore.

IS SEA BASED SUSTAINMENT ACHIEVABLE BY 2015?

> I have one yardstick by which I test every major problem—and that yardstick is: Is it good for America?
>
> - Dwight D. Eisenhower[1]

President Eisenhower's litmus test may be applicable across the entire Joint Capabilities Integration and Development System (JCIDS) process; it is certainly apropos when considering the notion of Seabasing – projecting joint combat power ashore from the Sea Base.

Seabasing is the subject of one of several Joint Integrating Concepts (JIC) that provide strategic guidance for input into the JCIDS process. The Seabasing JIC presents a vision of future operations from the sea without the benefit of port facilities. Utilizing military art and science, it describes how a commander might employ capabilities to achieve desired effects and objectives, unconstrained by current or programmed capabilities.[2] Originally a key component of the Navy's Sea Power 21 vision[3] Seabasing's "rebirth" as a JIC has expanded both the scope and breath of the concept.

Inherent in the Joint Logistics component of the Seabasing concept is the notion that logistics in support of the forces ashore will flow through the Sea Base. Key capabilities such as Command and Control (C2), total asset/in-transit visibility, selective off-load/on-load, and medical and tailored logistics packages are also enablers for the Seabasing concept. Such improved logistics capabilities, however, represent a tremendous leap over current operational logistics methods and may not be achievable by the envisioned year – 2015 – for a number of environmental reasons. This paper focuses on the logistics components necessary to sustain the Sea Base and ultimately joint forces ashore.

Seabasing as a Joint Integrating Concept

A JIC is "a description of how the Joint Force Commander 10-20 years in the future will integrate capabilities to generate effects and achieve an objective. A JIC includes an illustrative Concept of Operations (CONOPS) for a specific scenario and a set of distinguishing principles applicable to a range of scenarios."[4] Therefore, a JIC is an integral input to the JCIDS process and strategic guidance bounds the JIC in the development of new capabilities. The Seabasing JIC is no exception.

According to the Seabasing Joint Integrating Concept (JIC) version 1.0, dated 1 August 2005, Seabasing will "enhance the sustainment of future expeditionary joint force operations and minimize the operational pause associated with the build-up of large logistics stockpiles."[5]

The Seabasing JIC also establishes sustainment of selected joint forces afloat and ashore as a Line of Operation, integrating capabilities from Joint Operating Concepts (JOCs), Joint Functional Concepts, and Joint Integrating Concepts.[6]

So what is a Sea Base? The Sea Base is non-platform centric and consists of numerous ships including nuclear-powered aircraft carriers, multi-mission destroyers, littoral combat ships, submarines with Special Forces, maritime pre-positioned ships, logistics replenishment vessels, and Expeditionary Strike Group (ESG) platforms. Seabasing significantly expands the options for rapidly bringing decisive force to bear in support of strategic objectives.[7] This diverse make up of the sea base provides a multitude of options for naval and joint forces at sea and ashore.

The "afloat-base" is scalable and tailorable to the forces in the Joint Operating Area (JOA) and is an at-sea enabler for joint concepts such as Joint Forcible Entry Operations (JFEO), Global Strike, and Joint Logistics. The Sea Base can provide the Joint Force Commander with global C2, and can serve as a foundation for offensive and defensive fire; improving reach, agility, sustainability, and forward presence. The Seabasing JIC envisions presence, closure and assembly, employment, sustainment, reconstitution, and re-employment of operational capabilities at sea from a secure sea base, thereby limiting the force protection, anti-access, or area denial environments normally associated with projection of a joint land force to a foreign shore.

The National Defense Strategy (NDS) lists operating from the "Global Commons" and projecting and sustaining forces in distant anti-access, area denial environments as key operational capabilities and attributes.

> Our role in the world depends on effectively projecting and sustaining our forces in distant environments where adversaries may seek to deny us access. Our capacity to project power depends on our defense posture and deployment flexibility at home and overseas, on the security of our bases, and our access to the strategic commons.[8]

The potential resistance to ashore access, traversing authority, and flyover permission continues to grow, presenting political and military barriers to operational options. For example, in March 2003, the unwillingness of the Government of Turkey to allow the Army's Fourth Infantry Division to cross into Northern Iraq from Turkish territory forced General Tommy Franks to change his plans for invading Iraq, and delayed the employment of combat troops and equipment into the theater. Situations such as this and Spain and France's refusal, in 1986, to allow U.S. military aircraft – in route to Operation El Dorado Canyon – to fly through their airspace highlight the value of the Sea Base. The Sea Base provides joint and coalition forces with the ability to operate, independent of geopolitical considerations, from the largest maneuver

area - the sea. More importantly, it allows joint forces to close, assemble, conduct combat operations, and silently break apart upon mission/objective completion.

Once ashore those forces must be sustained through intra-theater and tactical lift from the Sea Base. The Seabasing JIC lists overarching conditions and standards for the envisioned Sea Base.[9] Many of these conditions and standards fall along logistics functional lines such as projecting the force ashore, sustainment, retrograde management, and reconstitution. According to the Seabasing JIC, during initial phases of an operation, the Sea Base will provide continued sustainment for up to two brigades ashore. The Sea Base will also be capable of supporting follow-on through input of select forces, further closing the gap between initial entry and follow-on forces. Using tactical air and surface lift, the Sea Base will provide scalable selective offload, transfer, and distribution of personnel, material, and all classes of supply. Operating in all weather, 24/7, through sea state 4, the Sea Base will provide a host of logistics functions in sustaining forces ashore including maintenance of joint equipment, equipment recovery support ashore, medical evacuation of causalities ashore, level III medical services, and the evacuation of patients and casualties from the Sea Base to facilities outside the JOA. [10]

The Seabasing JIC conditions and standards encompass a broad range of proposed future capabilities. The Sea Base has great potential to support the successful synchronization, projection, and sustainment of a full range of joint force capabilities in non-permissive environments where host nation cooperation is uncertain or unattainable.[11] The implication is that the Seabasing JIC will influence joint force employment, development, and resourcing across the family of Joint Future Concepts. Joint and service exercises and experimentation are necessary to identify capability gaps and potential family of systems solutions, as well as for balancing risk tradeoffs.

Modeling the Sea Base

This paper addresses several capability gaps in sustaining the sea base. The capabilities necessary to sustain Sea Base operations are dramatically different from those required to conduct traditional amphibious operations and power projection ashore. During the 2005 Seabasing Conference, Mr. Jonathan Kaskin, Director, Strategic Mobility and Combat Logistics (OPNAV N42), presented several questions posed by the Seabasing Logistics Concept of Operations Working Group (Figure 1). The working group led by OPNAV N42 and Headquarters Marine Corps (Installations and Logistics) (HQMC (I&L)) was chartered to assess and determine capabilities gaps, develop a logistics CONOPS architecture, and determine Sea Base logistics requirements. Areas of concern highlighted include inadequate interfaces

between connectors, insufficient common inter-modal packaging, and the need to improve handling and reduce retrograde, waste, and storage requirements as sustainment transits the supply chain.[12]

Joint Seabasing Logistics Issues

- What are the Joint and Coalitions Components that operate on or from the sea base?
- What Joint & Coalition Forces ashore are required to be supported from the sea base?
- What is the best utilization of the Sea base's sustainment capacity to support the Joint Force?
- What set of connectors are required to sustain the Sea Base?
- What is the maximum sustainable throughput of the Sea Base?
- What is the largest sustainable force? How long can it be sustained?
- How often is resupply required for a particular asset?
- What assets conduct resupply of the Sea Base and resupply of different Sea Base assets?
- Is resupply done on station or must ships of the Sea Base maneuver before a resupply event?
- What is the maximum distance from an advanced base that a Sea Base can be sustained?

FIGURE 1—JOINT SEABASING LOGISTICS ISSUES[13]

In answering the questions listed in Figure 1, the working group is continuing modeling and simulation exercises applying alternate scenarios to the CONOPS, sea base configuration, and support requirements. The modeling and simulation work will provide potentially valuable insights into the planning of the Seabasing construct. Simulation provides a forum to validate assumptions and include variability. It can also test joint Seabasing capability, needs, and vulnerabilities. Furthering the insights gained through simulation and modeling, live joint experimentation is necessary to gain operational lessons learned. Once identified, the application of risk and trade-off analysis to Seabasing CONOPS development and future investment opportunities may help ascertain future joint warfighting capability from the Sea Base.

Sustainment Challenges

So what are the expectations of sea based sustainment? Joint Pub 1-02 defines sustainment as, "the provision of personnel, logistic, and other support required to maintain and prolong operations or combat until successful accomplishment or revision of the mission or of the national objective."[14] The sustainment of combat troops ashore is a challenge even from

forward land bases. Sustainment from the Sea Base presents even greater demands on logistics systems (i.e., material movement ashore, selective offload, sea state limitations, etc.). The Seabasing JIC establishes the performance metrics as, "sustain joint sea-based operations, including up to at least two (2) joint brigades operating ashore, for an indefinite period using secure advanced bases up to 2000 nm away; also support selected joint maintenance and provide level III medical within the sea base."[15] The performance metrics identified in this statement provide a baseline for quantifying the gap between current at-sea logistics capabilities and those necessary to support the Sea Base in the 2015-2025 timeframe.

Identifying capability gaps is essential in the development of new capabilities. Just as in Service unique acquisition programs, joint concepts and ideas must stand up to challenges and tests to determine their feasibility, suitability, and applicability across the full spectrum of future military operations. As such, the Under Secretary of Defense (Acquisition, Technology and Logistics) (AT&L) established a Defense Science Board (DSB) Task Force to study the future capabilities posed in the Seabasing JIC. The DSB report provides an outline of existing gaps that hinder the full development of Seabasing.[16] Among them is the inadequacy of at sea cargo transfer capability, lack of necessary inter-theater (from outside the theater of operations) and intra-theater (within the theater of operations) lift, inadequate logistics support systems, and the sea base platforms themselves.

The Sea Base as well as ground forces ashore will rely on the Navy's ability to move heavy loads at sea. The DSB identified four separate at-sea cargo transfer processes: 1) selective cargo movement within ships, 2) at-sea transfer from vessels to lighters inside well decks, 3) at-sea transfer to and from lighters alongside sea base ships, and 4) at-sea transfer from black hull commercial vessels to sea base ships.[17] Our current ability to conduct at-sea transfer of material is somewhat limited and represents a critical capability gap across these dynamic cargo transfer processes. Current ship designs are inadequate to maximize the logistics principles under development in the Seabasing CONOPS. Developmental challenges include resourcing and building two new designs – General Purpose Amphibious Assault Ship (LHA(R)), and Maritime Propositioning Force (Future) (MPF(F)) – to replace existing shipboard types. These new ship designs, with lead hulls delivering in 2013 and 2008 respectively, include enhanced selective offload and cargo handling capability.[18] However, additional gaps exist in distribution, packaging, preservation, retrograde management, tactical connectors, offload capabilities, and asset visibility through the supply chain to the foxhole.

Sustaining the Sea Base also will require substantially increased intra-theater lift capabilities. It will also require increased tactical lift capability (connectors) from the sea base in

support of ground forces ashore. The Seabasing JIC lists this capability – sustain joint force operations from the sea – as one of the seven overarching Seabasing principles. Seabased logistics entail sustaining forces operating ashore through an increasingly anticipatory and responsive logistics system. The Sea Base, in turn, is sustained through an interface with support bases and strategic logistics pipelines enabling joint forces to remain on station, where needed, for extended periods. Seabasing uses selective off-load to assemble and deliver tailored sustainment packages directly to joint forces operating ashore.[19] This overarching principle of integrated, sustained, and tailored logistics support further defines gaps in current sustainment capabilities.

Intra-theater lift includes immediate response forces that are designed to move personnel, equipment, and sustainment from advance bases to the JOA. These forces will use high-speed intra-theater connectors to close the Sea Base. The use of these high-speed intra-theater lift assets for force movement exposes a critical path in sustaining the sea base. These same tactical connectors will be essential transportation assets for sustainment of forces ashore.[20] The lack of adequate tactical connectors, historically, has been a systemic problem during military operations. With few exceptions (i.e., Osprey (V-22), Landing Craft, Air Cushion (LCAC)), these smaller aircraft and vessels do not receive the funding required to deliver the full capability necessary to achieve or meet the needs of forces ashore. The independent management of these craft apart from the major acquisition programs they support – LHA(R) and MPF(F) – is imprudent. These systems are part of the larger program designed to operate in a system of systems environment and should be included in a common acquisition pipeline just as are onboard weapons systems.

Under the Seabasing construct, the role of the current Maritime Propositioning Force (MPF) becomes even more vital. According to Marine Lieutenant Gen Richard L. Kelly, selective off-load is impossible using existing MPF ships and would be detrimental to the Sea Base.[21] The inadequacy of current MPF ships accentuates the need for a more operable vessel. MPF(F) will be at the heart of the Sea Base and have additional capabilities in support of Ship To Objective Maneuver (STOM) and Operational Maneuver From the Sea (OMFTS). MPF(F) is a transformational, multi-capable platform supporting selective off-load, force closure, sustainment, cargo and inter-modal trans-shipment, joint interoperability and C2.[22] The integration of intra-theater connectors into the MPF(F) design/development process will greatly facilitate joint interoperability.

As addressed in the DSB and the subsequent National Academies Naval Studies Board[23] findings, having capacity to transport materiel is essential. The development of sea-basable

long-range heavy lift aircraft capable of lifting a twenty-foot equivalent unit (TEU)/standard container, a beachable High Speed Connector (B-HSC), and unmanned connectors are potential material solutions to Seabasing lift challenges. Then again, the development of concepts for their use is also essential. What are the type and number of surface interface points required between connectors and sea base platforms? What commercial standards are available to facilitate cargo transfer from commercial ships to connectors? How far inland will the connectors travel? What does the connector node map look like? What is the desired cargo flow rate? What is the maximum? Further concept development and testing are necessary to evaluate these complex connector operations.[24]

Integrating the distribution network – including packaging and containerization methodologies – with connector development will play a vital role in supporting forces ashore. Streamlined materiel handling procedures will minimize the logistics footprint on the ship deck and ashore. Optimally, materiel will move from origin to destination without the need for repackaging. Military break bulk capacity has greatly diminished in favor of twenty-foot containers; as a result, the ability to pick and package single unit items in the JOA for follow on delivery has declined. While the military has increased its use of containers, the ability to transport them by air remains deficient. Transporting fully stocked containers to combat troops without Ground Lines of Communication (G-LOCs) is impractical. The use of containers will also be constrained by available Sea Base deck size. Containers destined for the Sea Base require packing in a manner that facilitates selective off-load and a Seabasing form of "cross-docking" to predetermined connectors moving ashore. Rapid container turnaround will free up deck space and facilitate the return of retrograde out of theater. The Sea Base will not accommodate the "iron mountain." Innovative concepts in packaging, selective off-load, and container management will need to be developed to facilitate the distribution of materiel across the supply chain from origin to the foxhole.

The above requirements represent the tail end of the supply chain. A distribution system that supports a Sea Base must also provide in transit visibility and facilitate shipboard distribution operations. This distribution system must be supported by an anticipatory and networked logistics support system that identifies items and their location, and enables real-time capability to pull supply parts from stocks ashore or the Sea Base for rapid re-supply. The lack of this system represents a critical capability that is missing today. The need for a joint interoperable logistics system is nothing new and is also identified as part of a complementary Joint Functional Concept (JFC) called Focused Logistics.

Focused logistic is a transformational concept aimed at fundamentally improving logistics functions, responsiveness, and effectiveness. Conceptually, focused logistics considers the logistics pipeline from manufacturer to the warfighter. However, the Joint Force Commander is more concerned with the agility and responsiveness of the supply chain to the needs within the regional theater of operations. The concern is getting the right materiel, to the right place, in the right quantity to accomplish the mission; this requires a packaging and distribution system that is flexible, sustainable, and tailorable. Especially true on the space constrained Sea Base, masses of material will simply clog the logistics pipeline and hinder operations in theater. Focused logistics concepts include transforming current logistics systems into networked demand and decision support systems capable of synchronized, prioritized, directed, redirected, integrated, and coordinated common-user and cross-Service logistics commodities and functions.[25]

Joint deployment/rapid distribution and agile sustainment are two of the pivotal challenge areas identified in the Focused Logistics JFC. These challenges represent two crosscutting enablers that link joint operating forces and viable sustainment systems. The recognition of these two challenges resulted in the identification of the Joint Logistics (Distribution) JIC as a stepping-stone towards a Joint Deployment and Distribution Enterprise (JDDE) aimed at integrating joint distribution operations. Utilizing a Capabilities-Based Assessment (CBA), the identification of gaps and excesses, some discussed above, has the potential to lead to material and/or non-material solutions applicable to the joint logistics enterprise. Further, JDDE operations may provide logistics solutions to the Joint Force Commander to minimize seams in the pipeline characterized by current strategic and theater distribution segments.

The three essential tasks associated with the JDDE concept are Move the Joint Force, Sustain the Joint Force, and Operate the JDDE. The development of JDDE concepts has a direct correlation to the Sea Base sustainment CONOPS. The degree to which the Sea Base can sustain its components and forces ashore is dependent upon enterprise solutions from the strategic, operational, and tactical levels. JDDE capabilities, if realized, will transform how material arrives and moves in theater, what material arrives, who receives it, and when.[26] Sustainment capability gaps and potential solutions are identified during concept development, experimentation and testing. However, solutions to the gaps identified during concept development, experimentation and prototyping must apply across the joint force.

Thus far, Seabasing has enjoyed little participation from the Air Force and Army. The Air Force continues developing its own vision for global reach utilizing long range bombers. The Air Force vision for power projection and expeditionary warfare includes the use of B-2 and B-52

bomber squadrons conducting combat operations from the continental United States.[27] While feasible, given sufficient aerial refueling capability, inadequate dwell time and endurance limit Joint Force Commander options. The Army however, continues to gain interest in the joint Seabasing concept. Recognizing the need for a long-term strategy to include an afloat forward staging base, the Army Transportation Center is exploring alternatives that complement the joint sea base.[28] The Army has also increased participation in Seabasing panels and working groups. The attendance of Brigadier General Gainey, Director Force Projection and Distribution (HQDA), at the 2005 Seabasing Conference represents a significant step forward in Army contributions in developing the joint Seabasing construct.

Financial challenges

> The allocation of resources for today's and tomorrow's naval forces is like buying an insurance policy. We do not need to know precisely how or where we will use these forces in order to see their value—indeed, our value is greater because we are useful virtually anywhere.[29]

The question is whether the enhanced capability of the Sea Base, balanced against the risk of successful anti-access efforts by some future adversary, will be worth the investment. Opponents of Seabasing argue that there are several lower-cost options including 1) use historical spending levels and buy fewer, more capable ships, 2) again, using historical spending levels buy more, less-capable ships, 3) create a more survivable Seabasing force at a cost below planned, but above historical levels, and 4) forgo Seabasing in favor of forward presence, again at a cost above historical levels, but below planned.[30] Competition for financial resources will continue to be intense, and balance against current obligations and future service needs is necessary in determining investment priorities. In assessing the 2001 Quadrennial Defense Review (QDR), General Henry Shelton, Chairman of the Joint Chiefs of Staff (CJCS), clearly addressed resourcing as a constraint. "In my view the defense strategy outlined in the QDR 2001 – if matched with resources over time – will adequately address the current and emerging challenges of the strategic environment."[31] Utilizing Independent Capability Analysis and Assessment (ICAA), Navy Leadership attempts to match available resources with desired future capabilities. The Sea Basing ICAA focuses on sealift and airlift logistics functions that will be vital to Seabasing capabilities as well as Army and Air Force regional operations.[32] This dependence of joint power projection capabilities on air and sea lines of communication presents additional opportunities in the development of joint sea based logistics. The challenge is in capitalizing on this linkage.

Other financial trade-offs are necessary if the Navy is to achieve Sea Strike, Sea Shield, and ForceNet in addition to realizing the Sea Base. Some overlap is inherent in the development of these concepts, as the Sea Base is the centerpiece of the Sea Power 21 vision. How much Congress is willing to fund will drive the investment programs identified in the 2004 program guide to the U. S. Navy. Will the Navy invest in the MPF(F) platforms, amphibious ships, connectors and cargo handling capabilities or buy the Joint-Strike Fighter, destroyers, and aircraft carriers? To what extent will the Navy invest in each capability? All are essential to future force capabilities. [33]

Congress received the Navy's proposal of 375 ships (up from 293) in March of 2003. The increase, including Sea Base capable amphibious and MPF(F) ships, would occur over a thirty-year period and extend to 2035. According to a Congressional Budget Office study, the 2035 force envisioned in the Navy's plan would cost about $19 billion annually in ship building funds, up from an average of under $12 billion a year since 1980. Of that amount, amphibious and MPF ships would account for approximately 12 percent of total shipbuilding costs, an increase of 3 percent over previous funding levels.[34] Congress may be unwilling to resource the Navy's plan in whole when balanced against other priorities. For example, Seabasing could have contributed to large operations such as Desert Storm or Operation Iraqi Freedom (OIF), but not to sustainment of such large-scale operations.[35] The capability to mass and sustain a large army on land will continue to drive joint logistics doctrine. Further, logistics has traditionally taken a back seat to fielding sophisticated weapons systems.

Both the Focused Logistics JFC and the Joint Logistics (Distribution) JIC will favorably influence logistics concepts and development resourcing. Coupled with Transformation initiatives, new methods in packaging, selective off-load, cargo handling, and logistics support integration will continue to evolve. Will the development and application of these revolutionary ideas be available in 2015? These supply chain principles are certainly possible if resourced appropriately. Also, given adequate funding, the development of concepts such as skin-to-skin transfer between large strategic lift platforms and/or tactical connectors is also possible. Further, a networked Logistics Support System is an essential component in packaging, handling, storage, and retrograde redistribution. While risk in military operations is substantially greater, many businesses operate global supply chains managed by networked information technology systems – Enterprise Resource Planning (ERP). Currently each service and the Defense Logistics Agency (DLA) are developing versions of ERP. The alignment of these efforts will reduce life cycle cost and facilitate joint interoperability. In this type of effort, breaking

down cultural norms and merging business processes (blue printing) is more difficult than the technological solution itself.

As DLA continues to develop its ERP solution, it also sponsors a complementary logistics distribution effort. DLA manages, packages, and ships approximately 95% of service repair parts and 100% of service commodities (i.e., subsistence, fuels, medical, clothing and textile, construction and barrier material) required by military forces. DLA is continuing to develop a forward distribution strategy that fills gaps in the logistics pipeline. One concept, DLA Afloat Distribution Center (DADC) seeks to capitalize on mobility and forward presence. This innovative concept, if realized, will complement current forward/advance stocking positions discussed above. A critical enabler to the DACD is tailored supply based on Combatant Commander (COCOM), DLA, and Service needs, focused on sustaining the warfighter around the globe. Should this concept prove successful and progress toward full operational capability, this forward afloat stock point may meet many of the requirements of the sea base from within the theater. The DADC concept seeks to synchronize strategic and theater distribution processes, reduce logistics footprint, increase readiness, and reduce reliance on limited airlift capacity. The DADC adds a vital link between fixed forward depots, deployable depots, and joint Seabasing logistics support.[36]

Conclusion

> Vulnerability lies in the equipment chain, from manufacturing to employment, and other similarly interdependent systems, such as fuel and pilot training…logistics might well be considered the real center of gravity. [37]

Joint Seabasing is a transformational concept and represents a potential national capability requiring further development and analysis. The Seabasing JIC outlines the vision for how the Joint Force Commander 10-20 years from now may integrate this capability across a range of scenarios. Embedded in this vision, the Seabasing concept forms the backbone for joint operations in austere forward areas, free of many of the concerns associated with an enemy's anti-access efforts. As the above quote from Air Commodore Peter Dye of the Royal Air Force suggests, logistics might be the center of gravity for sustaining future operations. This statement is certainly applicable when discussing sustaining forces ashore from the Sea Base.

This paper discusses the Seabasing JIC relative to the key principle of sustaining joint force operations from the Sea Base. Such a capability, however, represents a tremendous leap over current operational logistics methods and may not be achievable by the envisioned year – 2015 – for a number of environmental reasons. As discussed above, the DSB and Seabasing Logistics Concept of Operations Working Group chaired by OPNAV N42 and HQMC (I&L) have

established a baseline for further Sea Base sustainment analysis. These initial "looks" are not all inclusive as many other critical success factors have potential to impede implementation of the joint Seabasing vision.

Sustainment of the Sea Base and forces ashore is a critical component of the Seabasing concept. While much work has occurred in this area, a great deal remains. The capability gap between current logistics operations and those required in support of joint Sea Base operations is staggering. The gap is not just in sustainment capacity, but also in concepts and interoperability. The alignment of technical solutions and CONOPS will be critical to Sea Base development. Concurrently, joint force alignment is necessary to integrate and execute new development efforts. Continuity and alignment of effort is required to avoid potential costly setbacks in concept development and divergent capability assessments. While there are numerous organizations within DoD developing Seabasing concepts and ideas – including the Joint Forces Command, the DoD Office of Force Transformation, the Navy Office of Force Transformation, OPNAV, HQMC (I & L), the USMC Expeditionary Force Development Center, NAVSEA, NAVSUP, Army Transportation Command, DLA, Army HQDA (G4) – no one agency or command is in charge of integrating these efforts.

Seabasing is not platform centric, but rather is a family of systems that must be integrated. For example, the up-front integration of MPF(F) with intra-theater lift and tactical connectors will allow for optimization of the connector node network and enhance throughput capability, thereby reducing sustainment gaps. The capabilities identified in the Seabasing JIC are part of a system of systems and approaching the Sea Base as disparate parts will sub-optimize the Seabasing concept. Much more synergy of effort, research and development (R&D), and testing is required in order to develop more stable ships, inter-model packing alternatives, distribution, selective offload, and logistics support integration for the joint warfight.

The logistics sustainment of the Sea Base and ultimately of joint forces ashore will require expanded experimentation and concept development. While the Army, Navy, Marine Corps, and Air Force historically have struggled in implementing emerging joint concepts, this is not the long-pole in the tent. Representing the true challenge is the substantial investment in hardware and future capabilities. This challenge is compounded by the resource constrained environment in which the DoD operates today. Along with other priorities (i.e., Global War on Terror (GWOT), Operation Enduring Freedom (OEF), OIF) the Seabasing concept will require substantial financial, R&D, testing, and industrial resources. Each service requires many of the same resources as they transform and adopt emerging concepts with higher service priorities. For example, as the Army transforms into a Future Combat Systems–based force, new

demands on scarce Army resources will occur. Whether in terms of personnel, material, financial, or equipment, these constraints will affect investment. In addition, the Army transformation is occurring as the service struggles with the demands of OEF and OIF. Sustaining these operations in the midst of a DoD wide transformation effort only complicates the challenge of adopting new warfighting concepts such as Seabasing. While the logistics tail is an easy target for transformation and savings, it may also be the center of gravity for future operations.

The delivery and development of Joint concepts such as Focused Logistics and the Distribution JIC will influence sea based sustainment. The accurate and rapid distribution of stores, petroleum, oil, lubricants, ammunition, spare parts, and equipment will be critical to the success of the Sea Base. Identified lift assets cannot sit idle while delays in receipt, reconfiguration and packing, storage and loading occur. Once loaded, the lift assets must expeditiously transport and distribute materiel through the sea base. Decision support tools and joint total asset visibility throughout the supply chain "supplier to foxhole" will be required. These capabilities do not exist today – sustained ground operations still require the "iron mountain" ashore and services operate incompatible supply systems that track and distribute materiel. The development of complementary efforts will go a long way to enabling sea based sustainment.

The future of the joint Seabasing concept is at a funding crossroads. With so many competing priorities, the 375 ship Navy as well as the envisioned Sea Base may be a "bridge too far." As a result, it is doubtful that the capabilities identified in the joint Seabasing vision will receive adequate funding. The defense budget does not provide a bow wave of support for new construction ships and since fruitful Seabasing capabilities are 30 years in the future, the joint Seabasing plan is an easy target for spending cuts. The Seabasing JIC supports the capability pillars outlined in the National Defense Strategy (NDS), as well as the 2001 and 2005 QDRs[38] but resources are not allocated in those strategic documents. Nonetheless, Seabasing flexibility and capabilities have great potential in implementing strategic policy in anti-access and area denial environments.

Even if the U.S. acquires new, more capable Seabasing ships, the Seabasing capability will mean little to ground forces if requisite supplies do not arrive when needed. Existing service and joint logistics systems are not interoperable and are incapable of either adequately supporting the Sea Base itself or forces ashore. The development of a logistics support system that allows for in-transit and inventory visibility, compatibility with service logistics systems, and tailorable load configurations and packing is required. The system must be responsive to

ongoing operations, anticipate supply and maintenance requirements, and seamlessly track material distribution throughout the entire supply chain (supplier to foxhole).[39] The capability represented by an integrated Logistics Support System neatly dovetails with the JFC Focused Logistics and Joint Logistics (Distribution) JIC concepts discussed above. The family of systems approach to the development of these two concepts must include the joint Sea Base environment as well as traditional military operations.

This paper highlights major logistics-related sustainment obstacles to the Seabasing JIC. Those listed are not all-inclusive, but represent significant investments in time, personnel, hardware, and financial resources that must be balanced against competing requirements and acceptable risk. Further concept development, integration, experimentation, and testing are required prior to investing billions of dollars in a joint Sea Base. Also, much work remains in the basic integration of military and interagency sustainment systems in advance of projecting forces ashore and attempting to sustain them from the Sea Base. The sustainment and logistics capabilities envisioned in the Seabasing JIC are attainable given requisite funding, testing, and experimentation; however, with so many competing priorities it is unlikely resources will be made available in developing the holistic Seabasing vision. Nonetheless, the ability to sustain amphibious operations from the global commons will continue to be an essential capacity. The programmed investment in new platforms (i.e., MPF(F), V-22, LHA(R), LCAC-X), if realized, will greatly increase amphibious capabilities and represents a major step forward in developing a limited joint Seabasing capability.

Endnotes

[1] Peggy Anderson, comp., *Great Quotes from Great Leaders* (Franklin Lakes, NJ: Career Press, 1997), 123.

[2] U.S. Department of Defense, *Joint Concept Development and Revision Plan* (Washington D.C.: U.S. Department of Defense, 30 July 2004), 5.

[3] Admiral Vern Clark, former Chief of Naval Operations established the Navy's vision for the twenty-first century. Extracted from *Proceedings*, October 2002 it reads, "The 21st century sets the stage for tremendous increases in naval precision, reach, and connectivity, ushering in a new era of joint operational effectiveness. Innovative concepts and technologies will integrate sea, land, air, space, and cyberspace to a greater extent than ever before. In this unified battlespace, the sea will provide a vast maneuver area from which to project direct and decisive power around the globe.

Future naval operations will use revolutionary information superiority and dispersed, networked force capabilities to deliver unprecedented offensive power, defensive assurance,

and operational independence to Joint Force Commanders. Our Navy and its partners will dominate the continuum of warfare from the maritime domain—deterring forward in peacetime, responding to crises, and fighting and winning wars.

By doing so, we will continue the evolution of U.S. naval power from the blue-water, war-at-sea focus of the "Maritime Strategy" (1986), through the littoral emphasis of ". . . From the Sea" (1992) and "Forward . . . from the Sea" (1994), to a broadened strategy in which naval forces are fully integrated into global joint operations against regional and transnational dangers.

To realize the opportunities and navigate the challenges ahead, we must have a clear vision of how our Navy will organize, integrate, and transform. "Sea Power 21" is that vision. It will align our efforts, accelerate our progress, and realize the potential of our people. "Sea Power 21" will guide our Navy as we defend our nation and defeat our enemies in the uncertain century before us. . . .

Three fundamental concepts lie at the heart of the Navy's continued operational effectiveness: Sea Strike, Sea Shield, and Sea Basing. Sea Strike is the ability to project precise and persistent offensive power from the sea; Sea Shield extends defensive assurance throughout the world; and Sea Basing enhances operational independence and support for the joint force. These concepts build upon the solid foundation of the Navy-Marine Corps team, leverage U.S. asymmetric advantages, and strengthen joint combat effectiveness.

We often cite asymmetric challenges when referring to enemy threats, virtually assuming such advantages belong only to our adversaries. "Sea Power 21" is built on a foundation of American asymmetric strengths that are powerful and uniquely ours. Among others, these include the expanding power of computing, systems integration, a thriving industrial base, and the extraordinary capabilities of our people, whose innovative nature and desire to excel give us our greatest competitive advantage.

Sea Strike, Sea Shield, and Sea Basing will be enabled by ForceNet, an overarching effort to integrate warriors, sensors, networks, command and control, platforms, and weapons into a fully netted, combat force. We have been talking about network-centric warfare for a decade, and ForceNet will be the Navy's plan to make it an operational reality. Supported by ForceNet, Sea Strike, Sea Shield, and Sea Basing capabilities will be deployed by way of a Global Concept of Operations that widely distributes the firepower of the fleet, strengthens deterrence, improves crisis response, and positions us to win decisively in war." Admiral Vern Clark, USN, "Sea Power 21: Projecting Decisive Joint Capabilities," Proceedings 128/10/1,196 (October 2002), available from http://www.usni.org/proceedings/Articles02/proCNO10.htm; Internet; accessed 7 March 2006.

[4]U.S. Department of Defense, *Joint Concept Development and Revision Plan*, 5.

[5] U.S. Department of Defense, *Seabasing Joint Integrating Concept* (Washington D.C.: U.S. Department of Defense, 1 August 2005), 6.

[6] Ibid., 7.

[7] Gordon R. England, Vern Clark, and Michael W. Hagee, *Naval Transformation Roadmap 2003: Assured Access & Power Projection…From the Sea*, (Washington, D.C.: U.S. Department

of the Navy, 2003): 56-58; available from http://www.oft.osd.mil/library/library_files/document_358_NTR_Final_2003.pdf; Internet; accessed 18 October 2005.

[8] Donald H. Rumsfeld, *The National Defense Strategy of the United States of America* (Washington, D.C.: U.S. Department of Defense, March 2005), 13.

[9]The Seabasing JIC lists the overarching conditions and standards for the sea base as: 1)project joint combat power from OTH (Over The Horizon) to inland objectives, 2) conduct operations in all weather, 24/7, through sea state 4, 3) provide facilities to effect recovery, decontamination, and reconstitution of Chemical, Biological, and Radiation (CBR) contaminated equipment and personnel, 5) provide multi-dimensional defense of the sea base, 6) provide C2 of distributed joint and multinational and coordinate with interagency forces, 7) provide scalability to enable the JFC to achieve deployment momentum and joint objectives across a range of military operations, 8) provide Joint Logistics Enterprise to sustain joint, multinational and interagency forces, 9) contribute to joint logistics management, 10) contribute to joint total asset and in-transit visibility, 11) employ standardized intermodal packaging across the services, 12) employ standardized trans-modal interfaces to/at/from the sea base, 13) integrate relevant intelligence activities (including adversary capabilities, disposition and intention) in support of the seabase. U.S. Department of Defense, *Seabasing Joint Integrating Concept,* 37 – 38.

[10] Ibid., 33.

[11] Ibid., 39.

[12] Jonathan Kaskin "The Challenge of Joint Seabasing Logistics," briefing slides, Seabasing 2005 Conference, Washington D.C., 17 February 2005, 3-5

[13] Ibid.

[14] Joint Staff , Department of Defense Dictionary of Military and Associated Terms, Joint Publication 1-02 (Washington D.C.: 12 April 2001 (as amended through 9 May 2005), s.v. "sustainment."

[15] U.S. Department of Defense, *Seabasing Joint Integrating Concept,* 8.

[16] The Defense Science Board is composed of preeminent civilians in the fields of science, technology and its application in military operations, research, engineering, manufacturing, and acquisition. The DSB advises the Secretary of Defense, Deputy Secretary of Defense, Under Secretary of Defense AT&L, and the Chairman Joint Chiefs of Staff on scientific, technical, manufacturing, acquisition process, and other matters of special interest to the Department of Defense.

Concluding its study of Seabasing in August 2003, the DSB Task Force identified twelve significant issues that the DoD must address to realize the vision of joint Seabasing. Identified as the "Dirty Dozen" in the DSB report, they encompass the full spectrum of warfighting capability gaps which DoD must address to make the joint Sea Base vision a reality. Focused in four primary areas (Management, Planning,, New Capabilities, Resources), the "Dirty Dozen are 1) establish a Joint Sea Base Program Office, 2) sustaining troops ashore, 3) protecting the force ashore, 4) countering threats, 5) Concepts of Operations, 6) cargo transfer at sea, 7)

long-range, heavy lift aircraft, 8) ships, 9) communication architecture, 10) logistics support system, 11) inter-theater lift, 12) development speed and funding. U.S. Defense Science Board Task Force, *Report of the U.S. Defense Science Board Task Force on Sea Basing* (Washington D.C.: Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, August 2003), 43; available from http://www.acq.osd.mil/dsb/reports/seabasing.pdf; Internet, accessed 13 January 2006.

[17]Ibid., 60-63.

[18] U.S. Department of the Navy, *Vision, Presence, Power 2004: Program Guide to the US Navy* (Washington D.C.: U.S. Department of the Navy, 2004), 102-106.

[19] U.S. Department of Defense, *Seabasing Joint Integrating Concept,* 22.

[20] Ibid., 26.

[21] Richard C. Barnard, *"Success of Sea Basing Concept Hinges on Effective Logistics Management Systems,"* Navy League of the United States, (June 2004), available from http://www.findarticles.com/p/articles/mi_qa3738/is_200406/ai_n9410231/print; Internet; provided by ProQuest Information and Learning Company; accessed 13 January 2006.

[22] U.S. Department of the Navy, *Vision, Presence, Power 2004: Program Guide to the US Navy,* 105-106.

[23] "The Naval Studies Board (NSB) is an operating unit of the National Academies, which operate under a charter granted by the United States Congress to provide independent scientific and technical advice to the government upon request. The NSB operates under the auspices of the NRC's Division on Engineering and Physical Sciences. During its 30 plus years of operation, the NSB has accepted tasks involving virtually all of the scientific and engineering disciplines supported by the Department of the Navy and has conducted studies for the Chief of Naval Operations addressing the design and operation of satellites; C4I systems; stealth technology; atmospheric and subsurface sensors; ship, submarine, and aircraft architecture; weapons development; pollution control; human factors; and education and training." (The National Academies Naval Studies Board Home Page, available from http:// www7.nationalacademies.org/nsb/; Internet; accessed 9 March 2006.)

[24] The National Academies Naval Studies Board, *"Seabasing : Ensuring Joint Force Access from the Sea,"* (The National Academies Press, 2005), 38-42; available from http://newton.nap.edu/books/0309095174/html/38.html).

[25] U.S. Department of Defense, *Focused Logistics Joint Functional Concept Version 1.0* , (Washington D.C.: U.S. Department of Defense, December 2003), 13.

[26] U.S. Department of Defense, *Joint Logistics (Distribution) Joint Integrating Concept, Comment Resolution Conference, Version .9* (Washington D.C.: U.S. Department of Defense, 26 September 2005), i.

[27] Hunter C. Keeter, "Navy, Marine Corps Sea Base Effort Inspires Joint-Service Cooperation," Navy League of the United States, (June 2004), 1 of 4; available from

http://www.findarticles.com/p/articles/mi_qa3738/is_200406/ai_n9410136/print; Internet; provided by ProQuest Information and Learning Company; accessed 13 January 2006.

[28] Brian I. Geehan, "Seabasing: Building the Army Contribution," briefing slides, Seabasing 2005 Conference, Washington D.C., 17 February 2005, 1-3.

[29] U.S. Department of the Navy, *Vision, Presence, Power 2004: Program Guide to the US Navy*, 36.

[30] U.S. Congress, The Future of the Navy's Amphibious and Maritime Propositioning Forces (Washington, D.C.: Congressional Budget Office, November 2004), xiv-xv; available from www.cbo.gov/ftpdocs/60xx/doc6003/Report.pdf; Internet; accessed 18 January 2006.

[31] Donald H. Rumsfeld, Quadrennial Defense Review Report (Washington, D.C.: U.S. Department of Defense, 30 September 2001), 67.

[32] U.S. Department of the Navy, *Vision, Presence, Power 2004: Program Guide to the US Navy,* 17-18.

[33] The Fiscal Year 2006 Defense Budget includes $9.4 billion for shipbuilding and funds procurement of San Antonio Class (LPD-17), Littoral Combat Ship (LCS), Virginia Class Submarine, and T-AKE. The 2006 budget also includes advance procurement funding for CVN-21 and DD(X), LCS R&D and construction, and continued procurement of the Virginia Class Submarine. This represents a decline in real dollars for FY 2006 as presented in the FY 2005 plan. However, the new plan calls for increasing procurement funding over the long term from (2007-2011). Steven Kosiak, *"FY 2006 Defense Budget Request: DoD Budget Remains on Upward Trajectory,"* Center for Strategic and Budgetary Assessments, February 4, 2005 [journal on-line]; available from http://www.csbaonline.org/4Publications/Archive/ U.20050207.BudReqFY06/U.20050207.BudReqFY06.pdf; internet; accessed 2 March 2006.

[34] U.S. Congress, The Future of the Navy's Amphibious and Maritime Propositioning Forces (Washington, D.C.: Congressional Budget Office, November 2004), xiv.

[35] Robert E. Harkavy, "Thinking About Basing," *Naval War College Review,* 58, no.3 (Summer 2005): 15 – 17; available from http://www.nwc.navy.mil/press/Review/2005/ summer/art1_su05.htm; Internet; accessed 24 October 2005.

[36] Fred Baillie, "DLA & the Seabasing Concept, Enhancing Supply Chain Management," briefing slides, Seabasing 2005 Conference, Washington D.C., 16 February 2005, 3-8.

[37] Peter Dye, quoted in U.S. Department of Defense, *Focused Logistics Joint Functional Concept Version 1.0*, 3.

[38] The 2005 Quadrennial Defense Review (QDR) provides strategic guidance for the transformation of DoD and emphasizes joint capabilities, expeditionary operation, while conducting operations in the "Long War." The QDR is not a programmatic or budget document and does not change the context for the Seabasing JIC as it relates to the 2001 QDR. Subsequent references to past strategic documents such as the 2001 QDR were relevant when the Seabasing JIC was developed, remain relevant today, and correlate more directly to the

concepts discussed in this paper. Donald H. Rumsfeld, Quadrennial Defense Review Report (Washington, D.C.: U.S. Department of Defense, 6 February 2006).

[39] U.S. Defense Science Board Task Force, *Report of the U.S. Defense Science Board Task Force on Sea Basing,* 79-80.